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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,019	03/10/2004	Hidehiko Soyama	119040	2173

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EXAMINER	
LANGMAN, JONATHAN C	
ART UNIT	**PAPER NUMBER**
1794	

MAIL DATE	DELIVERY MODE
11/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/796,019	SOYAMA ET AL.	
	Examiner	Art Unit	
	Jonathan C. Langman	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasuo et al, (JP publication 2002-202531) in view of Matsuoka et al., (U.S. 5,935,751) and the teachings of Leyrer et al. (US 2004/0005453).

Regarding claims 1, 2, and 5 Yasuo et al. teach an image display medium that comprises a pair of substrates, enclosed in the space between the pair of substrates is a resin comprising two particle dispersions opposing each other. One of the particle dispersions is positively charged and the other is negatively charged and the particle groups each have a different color. Yasuo et al. teach that the particle dispersions are formed in a resin matrix along with the addition of colorants and charge controlling agents [022]. The particle dispersions are mixed and dispersed in a water phase composition comprising ion exchanged water and calcium carbonate [0066]-[0070]. Yasuo et al. go on to teach that the particles were produced in an emulsifier as seen in Figure 3, and further state that after the emulsification the calcium carbonate particles are decomposed from the mixture using hydrochloric acid ([0082]). The charged particles formed from this emulsification step have a narrow particle size distribution.

Yasuo et al. do not teach a specific particle size or a variation coefficient for the calcium carbonate particles used in the water phase of the emulsion process, nor do they teach an emulsification rate.

Matsuoka et al. teach an emulsification step for dispersing resin, toner particles, colorants, and charge controlling agents (col. 10-col. 11). The materials are mixed in a water phase which comprises calcium carbonate and water. (col. 28). After mixing the particles, the emulsion was treated with hydrochloric acid to remove the calcium carbonate leaving a mono disperse toner particle with a small average particle size. The water phase comprises an inorganic dispersion stabilizer comprising calcium carbonate with a particle diameter preferably 0.1 microns or less the particle. If the particle diameter of the inorganic dispersion stabilizer is 2 microns or more the size distribution on the granulated toner is too broad and the prepared toner cannot be used. Matsuoka et al. teach that organic dispersions stabilizers may be used in combination with the inorganic stabilizers. The organic stabilizers may be a polyvinyl alcohol and a polymer having a carboxyl groups, and preferably form hydrophilic colloids (col. 12, lines 8-37). Given that the calcium carbonate and the organic stabilizer are mixed together, it is clear that the organic stabilizer would coat the calcium carbonate. Thus showing an emulsification step in which calcium carbonate is added as an emulsifying auxiliary to a display device particle forming composition that contains at least a colorant and a polymerizable monomer or resin, wherein the emulsifying auxiliary is calcium carbonate coated with a hydrophilic organic material, with an average dispersed particle size of 0.1 microns. Matsuoka et al. are silent to the variation coefficient of the

dispersed particle sizes, however the applicant states on page 5of the instant specification "The inventors also discovered that in order to control the dispersed particle size and the particle size distribution of calcium carbonate present in an aqueous phase, it is necessary to coat calcium carbonate with a hydrophilic organic material." Therefore it is inherent that the organic coated, calcium carbonate particles of Matsuoka et al. have a variation coefficient of 60% or less, because the applicants' state that the variation coefficient of the particles is a necessary function of the particles being coated with a hydrophilic coating.

Yasuo et al. and Matsuoka et al. are silent to the speed that the emulsion takes place at. Matsuoka et al. teach that the emulsification step is carried out in a high speed homomixer, throughout the specification however they are silent to the actual speed that is used for mixing. Leyrer et al teach an emulsion method of making a polymer layer for display devices where color particles may be added within the polymer layer. The polymer layer is made monodisperse with particles of fine particle sizes (see Examples). Leyrer et al. further teach that "uniform particle size i.e. low polydispersity index, is obtainable via the methods known to the skilled worker, e.g. by varying the amount of surface active compound (emulsifier or protective colloids and/or appropriate stirrer speeds" (Leyrer, [0070]). It would have been obvious to a person having ordinary skill in the art at the time the present invention was made to use any speed including those instantly claimed, in order to obtain a fine particle size with controlled dispersity, as Leyrer et al. has shown that one skilled in the art would have obtained this speed through routine experimentation. One of ordinary skill in the art would have understood

that the speed needed for desired dipersities and particle sizes would differ depending on the emulsifier and the amount of emulsifier used in the emulsion process. Depending on the amount of emulsifier used, such as calcium carbonate, as taught by Yasuo et al. and Matsuoka et al, one of routine skill in the art would have modified the emulsion speeds for desired results.

Regarding claim 3, Matsuoka et al. teach that the emulsifier is used in an amount within the applicants claimed range of 2-100 wt percent. It would have been obvious to a person having ordinary skill in the art at the time the present invention was made to use any amount of calcium carbonate, as Leyrer et al. have taught shown that for desired results the amount of emulsifier can be altered in order to obtain uniform particle size.

Response to Arguments

The applicants amended claims, due to the indicated allowable subject matter from the previous rejection. The applicants' amendment has been considered but upon further consideration the amended claims are subject to a new ground(s) of rejection.

Relevant art also includes commonly owned US publication US 2003/0123127 A1.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan C. Langman whose telephone number is 571-272-4811. The examiner can normally be reached on Mon-Fri 9:00 am - 4:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCL

Callie Shosho
Callie Shosho
Supervisory Patent Examiner